

## COVID, PHYSICAL EDUCATION AND PREVENTION

Covid, Educación Física y Prevención

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#### **KEYWORDS**

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#### ABSTRACT

This paper aims to promote the use of Dialogic Sessions in Physical Education to prevent the spread of COVID-19 in Primary Education and Compulsory Secondary Education by creating healthy habits related to the pandemic. Using Dialogic Sessions in Physical Education encourages discussion, debate, reasoning and decision-making to prevent the spread of the pandemic.

# PALABRAS CLAVE RESUMEN Deportes Este trabajo tiene como objetivo promover el uso de las Sesiones Dialógicas en

Este trabajo tiene como objetivo promover el uso de las Sesiones Dialógicas en Educación Física para prevenir la propagación del COVID-19 en Educación Primaria y Educación Secundaria Obligatoria mediante la creación de hábitos saludables relacionados con la pandemia. El uso de Sesiones Dialógicas en Educación Física fomenta la discusión, el debate, el razonamiento y la toma de decisiones para prevenir la propagación de la pandemia.

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#### **1. Introduction**

Over 200 million people all over the world have become infected with SARS-CoV-2 since the earliest cases were detected in late December 2019 (Organización Mundial de la Salud [OMS], 2021) The most frequent symptomatology is cough, fever, myalgia and respiratory problems, as well as certain gastrointestinal disorders including hyporexia, nausea, vomiting and diarrhoea. This sudden outbreak of unexplained symptoms in Wuhan, China, raised alarms throughout the international community. The virus caused a form of bilateral pneumonia with atypical characteristics resulting in persistent and extreme inflammation which often proved fatal. Weeks after the initial outbreak the agent was isolated and the new coronavirus was identified: SARS- CoV-2. The origin of SARS-CoV-2 remains unknown although the most common hypothesis points to bats as the principal vector. The virus spread rapidly across the world and a global pandemic was officially declared by the World Health Organisation on March 11, 2020. At the time of writing, official figures report some 216 million confirmed cases and 4.5 million deaths (López & Ochoa-Martínez, 2020; Colegio Oficial de Licenciados en Educación Física y Ciencias de la Actividad Física y del Deporte [COLEF], 2020).

Statistics show that SARS-CoV-2 can strike individuals of any age, with a slightly higher frequency among men, leading to an illness known as COVID-19 (OMS, 2020). Although mortality tends to increase progressively with age there have been cases of deaths as young as 9 years of age or less. The illness is particularly grave for those suffering from previous respiratory illnesses, impaired immune system, diabetes and cardiovascular illnesses. Furthermore, the pandemic has put a tremendous strain on public health systems, particularly emergency rooms and hospitals. The United States is the country with the highest number of infections and deaths, followed by Brazil, India and Russia (OMS, 2021). It is estimated that children and adolescents represent 1-2% of those infected by the virus and child mortality rates are vanishingly low although it remains unclear why this is the case. It has been suggested that children have a higher ratio of antibodies as a result of vaccinations against rubella (Rothan & Byrareddi, 2020). A number of authors have claimed that the inflammatory response is milder among young people compared to adults and so less affected by the virus (Carabaño-Aguado, 2020). Studies show the virus targets the angiotensin-converting enzyme 2, which has a lineal relation to the age of children and adolescents. A correlation has been observed between the viral load and the gravity of the infection, this being lower among children. This data may lead to an underestimation of the number of infected children and adolescents and the role they play in spreading the virus within families and communities, although this has yet to be confirmed. Ultimately, these new circumstances demand a great deal of scientific study, reflection and action.

The most effective way to prevent the spread of COVID-19 is information (Hernández et al., 2020). The entire population must be made aware of the risks to which they are exposed and their responsibility in taking the appropriate measures to prevent the spread of the infection and to prevent themselves from becoming infected. This includes establishing a system of public alerts, not in the event of outbreaks of the virus but also the spread of multi-drug resistant organisms. In this way the public is informed about possible outbreaks with the appropriate regulations put into place. In the face of this pandemic, we must foster a culture of safety at all levels, from schools to the highest levels of government. It is necessary to act with responsibility and with unity. The field of Physical Education can contribute to this effort through dialogic sessions which develop the habits and behaviors to stop the spread of COVID-19 and to create a space for dialogue, debate and reasoning among preadolescent, adolescents and young people.

It has been determined that the first case of COVID-19 appeared in China (Wuhan) in late 2019. The New England Journal of Medicine reported that among 425 reported cases of COVID-19 patients had an average age of 59 and 56% of cases were among men. The source of the contagion is thought to be live animal and shellfish markets (The New England Journal of Medicine, 2021). A study by Frontiers in Paediatrics on cases of COVID among children confirms that gastrointestinal disorders, diarrhoea, and fever can indicate infection (Cai et al., 2020). It is also known that COVID is less virulent among children and mortality is minimal. The same study also details the clinical history of young patients admitted to hospital with some type of respiratory disorder who were subsequently diagnosed with pneumonia and COVID-19. The initial symptomologies were often unrelated to COVID-19, the first child had kidney stone and the second a head trauma; all showed signs of pneumonia, detected using a computed tomography scan of the thorax and later confirmed as COVID-19. A specialist in Gastroenterology, Hepatology and Child Nutrition at the Hospital 12 de October in Madrid confirmed the findings of the study, noting that the most frequent symptoms of COVID-19 are: fever, cough, difficulty breathing, asthenia, arthromyalgia and headaches (Carabaño-Aguado, 2020); intestinal disorders are also common, especially among younger patients as shown in Figure 1 and Figure 2.

#### Figure 1. Flow chart of contagion



Figure 2. Flow chart of contagion among children



In this case, Physical Education is used to develop the habits that will help prevent the spread of the virus, including those recommended by the WHO: frequent hand washing and disinfection, respiratory measures such as (wearing masks or covering one's mouth when coughing) maintaining social distance (1 metre) and seeking medical attention in the case of fever coughing or difficulty breathing (OMS, 2020).

The present paper presents the format of Dialogic Session in Physical Education to prevent the spread of COVID-19 among students in Primary and Obligatory Secondary Education by encouraging the recommended hygienic-health measures to deal with the pandemic. Dialogic Sessions in Physical Education are used to foment dialogue, debate, reasoning and positive decision-making to mitigate as far as possible the spreading of the virus.

## 2. Development of healthy habits through physical activity

The benefits of an active lifestyle are abundantly clear, reducing the risk of coronary and cardiovascular disease, obesity, insulin resistance and various types of cancer, including colon and breast cancer. There is also a well-known link between physical activity and mental health, emotional wellbeing and greater longevity. There is an established relation between illness and behaviors, especially with regards to chronic illnesses, attributed to poor

habits including insufficient physical exercise. There are two fundamental aspects of the Epidemiology of Physical Activity (EPA): 1. The study the relation between illness and physical activity, 2. The analysis of the determining factors in practice and habit of physical activity among a specific population. With scientific evidence confirming the correlation between illness and premature death measures can be taken to attempt to modify the habits of the target population and mitigate the frequency of these occurrences (Pérez-Ugidos et al., 2014; Baños & Arravales, 2020).

The practice of physical activity in contemporary society is increasingly important given modern lifestyles characterised by sedentary behaviour, the absence of habits that lead to emotional stability, and the neglect and self-care of the body. A great deal of scientific research has been conducted into human health and fitness, proposing: times for physical activity, the intensity and type of physical activity, a reduction in times spent on sedentary activities (Mollá-Serrano, 2007).

Scientific research has recognised the benefits of the practice of sports and the influence of physical activity in encouraging healthy habits among students in Primary Education who feel motivated to participate in sports (Bailey, 2006). Studies have found that the years following this stage is when the motivation to participate in physical activity diminishes, displaced by the use of devices and new technologies that lead to a more sedentary lifestyle among young people (Chinn & Rona, 2001).

#### 3. Psychology of COVID-19 prevention and management

The rapid spread of COVID-19 among the population, due to the highly contagious nature of the virus and the negligence of some, may have catastrophic consequences for society, including the collapse of public health services in the face of massive demand for medical care. Thus, developing a Physical Education program that provides instruction on the appropriate habits for COVID-19 should be a high priority for public authorities and the public health services.

The current pandemic is the most serious public health crisis of the last 50 years, paralysing the cities, education systems and economic activity in countries around the world. There is still no certainty of an effective vaccine that can resolve this problem on a global scale. In this crisis, our only line of defence is our fellow citizens, human behaviour. This was also the case in dealing with HIV-AIDS, regardless of the virus, its origins or treatment, the solution lay in the behaviour and actions of individuals (Bayés & Ribes, 1992). Years later, much research points to the importance of human behaviour in prevention apart from adherence to treatment (Urzua et al., 2020).

There are many psychological models that attempt to explain how to maintain one's health and physical fitness (Vera-Villarroel et al., 2015), including: belief in health, transtheoretical models, locus of control, self-effectiveness and reasoned action. Scientific scholarship has confirmed that the mechanisms for acquiring, maintaining and altering behaviour is learning, and healthy habits and lifestyles are certainly influenced by this same mechanism (Robles-Sánchez, 2020). Thus, the effectiveness of any solution to the pandemic will depend on our knowledge, our emotions and, ultimately, on our behaviour.

The COVID-19 pandemic has led many to rethink their behaviour and lifestyle regardless of their situation, either in quarantine, in isolation, in a preventive mode through social distancing or under medical supervision. All preventive measures in each of these situations involve behavioural attitudes. This paper will describe the use of physical activity and sports to improve individual behaviour in dealing with the public health emergency which continues to be ongoing. The practice of sports and physical activity provide an environment for debate, reasoning and dialogue that can help pre-adolescents, adolescents and young people to better understand the current circumstances, that is, the causes of illness and the preventive measures that should be taken (Torres-Salazar et al., 2019).

Research has also be conducted into the psychological impact of COVID-19 and the mental health of individuals (Torales et al., 2020). The initial reaction of the public to the unfolding pandemic was fear and uncertainty, often leading to negative social behaviour (Shigemura et al., 2020) and mental health problems such as anguish, insomnia, rage and extreme fear of contagion. An additional impact of COVID-19 was an increase in alcohol abuse, tobacco consumption and social isolation as well as post-traumatic stress disorder, anxiety disorder, depression and somatisation. To prevent or address these mental health issues education and social programs must be set up to provide therapeutic intervention from an early age (She et al., 2020). A similar impact was found in a study of messages posted on a Chinese social media site (Weibo) before and after the official declaration of the COVID-19 pandemic on January 20, 2020. The study found an increase in messages expressing negative emotions such as anxiety, depression and indignation and a decrease in messages expressing positive emotions, happiness or life satisfaction (Li et al., 2020).

## 4. Dialogic session in physical education in the prevention of COVID-19

The virus poses a particular risk due to the speed of contagion (Cruz et al., 2021; Haque et al., 2021). The aim is therefore to offer a series of Dialogic Sessions in Physical Education based on the findings of various authors (Castanedo-Alonso, 2021; Giles-Girela et al., 2021; Montoya & Uzcátegui, 2021; Andrey-Bernate & Alfaro-Urtatiz,

2021). These sessions are designed not only to develop the motor skills and physical aspects of sport but also to incorporate all aspects of the individual, that is, reasoning, emotions and feelings. Thus, dialogic learning offers a comprehensive approach to the human being to develop the humanistic perception of the students. Dialogic learning is used to raise awareness about the pandemic in physical education classes and further the adoption of preventive measures for COVID-19 in Primary and Secondary education, using indoor football as a sport. Each session has a duration of 60 minutes. The key preventive measures currently being taken are: a) frequent hand washing; b) social distancing; c) to wear a mask; d) to avoid touching the eyes, nose and mouth; e) when coughing to use one's sleeve by bending the elbow or using a handkerchief; f) if unwell to remain isolated at home; g) to seek medical attention in the case of fever, cough or difficulty breathing.

Session 1: To understand the basic individual and collective aspects of indoor football. To know the symptomology of COVID-19.

Part 1. In this first part the objectives of the session are presented. Students are asked to sit on the floor in a semicircle and asked: What is COVID-19? What are the main symptoms? What should we do if we have these symptoms? This part has a duration of 5 minutes.

Part 2. In this second part, students do warm-ups to prepare joints and muscles. The exercises are: 1. In trios, students play against the person closest and support the one furthest away. 2. Identical to the previous one but limiting the playing space. This part has a duration of 10 minutes.

Part 3. This is the main part of the session or part of confrontation. In the dialogic session it is very important that life lessons be extracted from confrontation and conflict. The exercises are: 1. In groups of 6. Four attackers and two defenders. The same as in the warm-up exercises only now the one furthest from the ball stays outside the field of play, kicking any ball that go outside the area when the play is over. 2. Normal game, but goals count double started from in our field, passing the ball to all the students. This part has a duration of 30 minutes.

Part 4. This part of the session provides an opportunity from reflection on a moral dilemma prepared in advance by the teacher related to COVID-19. The moral dilemma is: "Your best friend plays for a different football club and has tested positive for the virus. They tell you this over the telephone. In the next match you are scheduled to play against them. What will you do in this case? Will you play the match? Tell your coach about your friend having Covid? Will you tell the rest of the team about the situation? This part has a duration of 10 minutes.

Part 5. In this part the aim is the transfer of the values learned in class to the family, society and the school environment. The students are asked to produce a written assignment with an example similar to that seen in class. This part has a duration of 5 minutes.

Session 2: To handle and shoot the ball with both feet. To develop a responsible attitude towards others in dealing with the pandemic.

Part 1. In this first part the students are gathered and the objectives of the session are presented. This session will focus on responsibility. What does it mean to act responsibly in the case of the pandemic? When do we act responsibly regarding COVID? Why are we responsible for others? This part has a duration of 5 minutes.

Part 2. In this second part students do warm-ups to prepare joints and muscles. The game for this warm-up is Prisonball: students are put into two groups divided by a line. They try to hit players from the other team with the ball. When a player is hit without returning it they receive a penalty and go to the end of the field. The team that sends the entire opposing team to the end of the field wins. This part has a duration of 10 minutes.

Part 3. This is the main part of the session or confrontation part to analyse the possible difficulties that may arise. This part will consist of the following exercises: 1. Football in pairs. The group is divided in two. Each pair group holds hands and tries to play football. 2. Groups of 8 players are formed. The individual players will have to drive the ball through a corridor formed by the other players who will try to kick the ball away, trying to force the player outside the corridor. This part has a duration of 30 minutes.

Part 4. The fourth part is the central part of the activity, it seeks to reflect on responsibility and uses a moral dilemma as a means. It is important to insist to students about respect for the speaking time and the opinions of others. For this session, the following moral dilemma is proposed: "You are a player of a football club of great importance in your city, from the morning you have cough, fever, malaise and diarrhoea. Suspect you have COVID-19. The next game of your team, decide the league and the position that will remain for next year, you are an important piece since you have 22 goals in the season. How would you act in this situation? Would you attend the game knowing that you are infected and can you infect the rest of your teammates? Would you inform your coach of the situation you are in? This part has a duration of 10 minutes.

Part 5. In this part the aim is the transfer of the values learned in class to the family, society and the school environment. The students are asked to bring a similar situation to share with their classmates. This part has a duration of 5 minutes

Session 3: To learn the different possibilities for shots, varying the distances. To emphasise the importance of frequent hand washing and disinfection.

Part 1. In this first part the objectives of the session are presented. Students are asked to sit on the floor in a semicircle and asked: Why should you wear a face mask? Do face masks prevent the spread of COVID-19? What other important measures can we take along with wearing masks? This part has a duration of 5 minutes.

Part 2. In this second part, students do warm-ups to prepare joints and muscles. The exercises are: 1. In pairs, running around the space following their partner, one with a ball and one without. 2. Identical to the previous one, but the partner must guess the number in the hand of the partner ahead without the ball. 3. All students are within a delimited space in teams of 4. They pass the ball from one teammate to another while the other team tries to get the ball. When the time is up, the group without the ball loses. This part has a duration of 10 minutes.

Part 3. This is the main part of the session or confrontation part to analyse the possible conflicts that may arise. This part will consist of the following exercises: 1. Beginning in the centre of the field, the students are divided into groups of 8. They make passes in pairs diagonally and shoot at the goal. Each group is positioned in the central area and the sides. 2. Identical but the students rotate to the right after doing the exercise. 3. Shots on goal from a stop position from outside the area and using both feet to shoot at random. This part has a duration of 30 minutes.

Part 4. This is the reflection part of the dialogic session. Students use a moral dilemma to encourage debate and critical thinking. The moral dilemma chosen for this part is: "In a competition with my football team outside the city where I live, during breakfast, we use the salt-shaker, the oil and cutlery. At the end of breakfast one of my colleagues does not wash his hands and does not use the hydroalcoholic gel. How should we act after sharing space and material? What would you say to the partner who didn't wash his hands? What can be the consequence of not washing your hands? This part has a duration of 10 minutes

Part 5. In this part the aim is the transfer of the values learned in class to the family, society and the school environment. The students are asked to produce a written assignment with an example similar to that seen in class. This part has a duration of 5 minutes.

#### **5.** Conclusions

With regards to the types of interventions that may be possible, evidently at this point the information available about the virus is limited. Nevertheless, various universities are working tirelessly to collect and transmit all the information possible. All specialists agree that specific protocols should be applied to different affected groups: patients, medical personnel, close contacts and family members of those infected, professionals in the health sector related to the pandemic as well as the general public (Zhu et al., 2020). The analysis and possible measures to control the pandemic should all be oriented towards encouraging safe and healthy habits that limit exposure to the virus, facilitate the treatment of those infected until a 100% reliable vaccine is available and avoid cases of post-traumatic stress among affected individuals.

The Chinese government established a priority of preventive care in dealing with the pandemic: 1. patients with severe symptoms, medical personnel and researchers; 2. patients with moderate symptoms, close contacts, suspect patients with fever; 3. patients related to groups 1 and 2, such as family members, colleagues and friends; 4. people in affected areas, vulnerable groups and the general public.

The model of Dialogic Sessions in Physical Education to prevent the spread of COVID-19 requires that teachers, monitors and other professionals in the field of Physical Education, are fully trained and informed about the pandemic, and thus able to design examples of moral dilemmas for debate and analysis of proper behaviour and to correct misperceptions about the pandemic. Evidently, Physical Education and Sports are an ideal avenue for acquiring healthy habits and engaging in reflection and debate in order to make informed decisions.

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